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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,199	01/04/2002	Jen-inn Chyi	JLINP081	2021
25920	7590	12/19/2003	EXAMINER	
MARTINE & PENILLA, LLP 710 LAKEWAY DRIVE SUITE 170 SUNNYVALE, CA 94085			LOUIE, WAI SING	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application N .	Applicant(s)	
	10/039,199	CHYI, JEN-INN	
	Examiner Wai-Sing Louie	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 08 September 2003.
- 2a) This action is FINAL.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 11,12 and 21-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 11,12 and 21-45 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-12 and 21-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. (US 6,323,053) in view of Furukawa et al. (US 5,930,656).

With regard to claim 11, Nishikawa et al. disclose a method for manufacturing a buffer layer of a light-emitting semiconductor device (col. 6, line 66 to col. 19, line 5 and fig. 4) comprising the steps of:

- Providing a substrate (col. 10, line 11);
- Nishikawa et al. disclose using MBE method for growing the buffer layer and the metal source is not an organic metal gas. However, Nishikawa et al. disclose growing the buffer layer could be adopted to MOVPE or MOCVD method (col. 10, lines 1-3) and the metal source would, therefore, be organic metal gas such as disclosed in Furukawa et al. (Furukawa col. 3, lines 43-49 and fig. 1). Therefore, it would have been obvious for the one with ordinary skill in the art to provide organic metal gas in Nishikawa's device. Nishikawa et al. modified by Furukawa et al. would disclose the buffer layer 13 is formed by organic metal gas (col. 9, lines 45-51) and a nitride gas is supplied (in the case of MOCVD, Furukawa et al.

disclose the nitride gas col. 6, lines 56-67). The nitrogen atoms substitute the Se in layer 13 to form the interface of GaN layer 14 (col. 10, lines 21-39). Therefore, the buffer layer 13 and 14 composes of at least one material selected from the group consisting of metals (Group III) and compound semiconductors (Group III nitride).

With regard to claims 12, 26, and 41, Nishikawa et al. disclose the substrate is made of Si, GaAs, InP, and GaP (col. 11, lines 50-55).

With regard to claims 21-22, 27, 29, 31, 33, and 42-43, Nishikawa et al. disclose the metals and alloys are selected from the group consisting of Al, In, B, (col. 4, lines 61-67) and Ga (col. 5, line 35).

With regard to claims 23, 28, 30, 32, 34, 36, and 44, Nishikawa et al. disclose the compound semiconductors are selected from the group consisting of GaN (col. 9, line 65), InGaN, AlGaN (col. 3, line 9), AlN, and AlInGaN (col. 13, lines 5-6).

With regard to claims 24, 37, and 45, Nishikawa et al. disclose the method is metal organic CVD (col. 10, line 3).

With regard to claims 25 and 40, in addition to the limitations disclosed in claim 11, Nishikawa et al. modified by Furukawa et al. also disclose:

- Repeating the step of supplying the organic metal gas and supplying the nitride gas to form the GaN layer 14 (col. 9, lines 45-67), which composes of at least one material selected from the group consisting of metals (Group III) and compound semiconductors (Group III nitride).

With regard to claim 35, both Nishikawa et al. and Furukawa et al. do not disclose the source gas containing arsenic. However, arsenic is a Group V element and Nishikawa et al. disclose the buffer layer includes Group III-V compound semiconductors (col. 4, lines 5-7). Therefore, it would have been obvious for the one with ordinary skill in the art to include arsenic and alloy source gas in Nishikawa's device.

Claims 38-39 are written as device claim and the applicant has chosen the method of manufacturing prosecution. Therefore, claims 38-39 does not carry any patentable weight.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

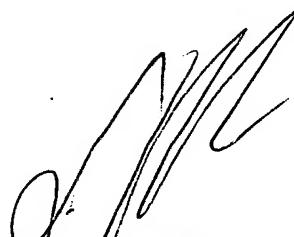
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474 before 1/12/04 and (571) 272-1709 after 1/12/04. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Wsl  
December 8, 2003.

  
LONG PHAM  
PRIMARY EXAMINER